

## WILDLIFE MANAGEMENT UNIT 14 (35 & 36) - SAN JUAN

### Boundary Description

**Grand and San Juan Counties** - Boundary begins in Moab at the Junction of the Colorado River and Highway US-191; then south on US-191 to the Big Indian Road; east on this road to the Lisbon Valley Road; east on this road to the Island Mesa Road; east on this road to the Colorado State Line; south on this state line to the Navajo Indian Reservation Boundary; west on this boundary to Lake Powell; north along the east shore of this lake to the Colorado River; north on this river to Moab and beginning point.

### Management Unit Description

Management unit 14 is a combination of old deer herd units 35 (Abajo Mountains) and 36 (Elk Ridge). It is a very large unit with summer and winter ranges covering over 2 million acres. The U.S. Forest Service administers 80% of the summer range and the BLM 19%. Fifty-six percent of the winter range on unit 14 is on BLM land with another 17% on Forest Service lands. Private land occupies 18% of the winter range and National Parks 3%.

### Abajo Mountains

The San Juan-Blue Mountain portion of unit 14 covers a large portion of the eastern side of San Juan County in southeastern Utah. It is a climatically and topographically diverse area. Elevation ranges from 4,500 feet near Bluff to 11,445 feet on Abajo Peak. The Abajo Mountains, found in the west-central part of the unit, contain the units summer range. These mountains typically have steep slopes and rugged canyons which have well developed vegetational communities except for the rocky peaks above timberline. The highest meadow slopes have been terraced to slow destructive erosion caused by historic overgrazing. From the base of the mountain, gentle slopes extend out into the flat mesas and rough desert canyon lands which constitute the majority of the unit's land area. Major drainages are Indian Creek and Hatch Wash which flow north to the Colorado River and Cotton-wood, Johnson, Recapture, Verdure, and Montezuma Creeks which flow east and south to the San Juan River. Municipalities include Monticello, Blanding, Bluff, and Montezuma Creek.

The normal winter range is found on various sized and shaped mesas at middle elevations. The upper elevational limit of most deer use during normal winters is approximately 7,000 feet. During mild winters however, the range may remain open up to 8,000 feet.

The desert shrub type is found at low elevations along the northern boundary. This type is used by deer only in the most severe winters. The sagebrush-grass and pinyon-juniper types are found side by side on the mesa tops of the normal winter range which are very important to wintering deer. The sagebrush-grass type provides quality forage while the pinyon-juniper type, though relatively unproductive, provides important cover. The pinyon-juniper-mountain brush type is the most productive, but is usually excluded from use by deep snow during the more harsh winters. The pinyon-juniper-sagebrush type is scattered throughout larger tracts of pinyon-juniper and is also important during severe winters.

The summer range is centered on and extending down the peaks of Blue Mountain to about 8,000 feet. The lower limit on the north and east sides of the mountain are closer to 7,600 feet (Giunta and Musclow 1983). Oakbrush is the dominant vegetation type at the lower reaches of the summer range. There is a mixed interspersed of oakbrush, sagebrush-grass, and forest types that provides the essential cover and forage requirements for fawning and caving. The slopes of the middle elevation summer range are dominated by mixed mountain brush. Subalpine forest, aspen, and grass-shrub lands are prevalent at higher elevations.

Major land uses on the unit are grazing, farming, timber, mining (mainly uranium and gold), and gas exploration and production. In recent years with falling uranium prices, mining activities have decreased while oil and gas exploration have increased. There has been some more recent development and increased activity on the critically important Harts Point winter range.

### Elk Ridge

The Elk Ridge unit was previously referred to as Unit 31B but was changed to Unit 36 in the spring of 1992. It was then combined with Unit 35 and renamed Wildlife Management Unit 14 - San Juan in 1998. The Elk Ridge portion of unit 14 is located in the western half of San Juan County. Elk Ridge, a long, flat, sedimentary plateau located along the central portion of the east boundary bordering the Abajo Mountains, is the dominate topographic feature. Horse Mountain, found at the north end of Elk Ridge, is the highest point at approximately 9,200 feet. Elk Ridge itself is relatively level and ranges from 8,600 feet at the north end to 8,400 feet at the south end. Surrounding the steep slopes below Elk Ridge are numerous flats which provide most of the winter range on the unit. These flats are at elevations of 5,000 to 6,000 feet and dissected by numerous deep slickrock canyons which end at the San Juan and Colorado Rivers at about 4,000 feet. The most prominent drainages are South Cottonwood Wash, Butler Wash, and Comb Wash which drain into the San Juan River; and Beef Basin Wash, Dark Canyon, White Canyon, and North Cottonwood Wash which drain into the Colorado River. Two small communities, Bluff and Mexican Hat, are located along the unit's southern boundary. The unit boundaries encompass Natural Bridges National Monument and part of Canyonlands National Park.

The aspen type probably merits special management considerations since it is prone to invasion and replacement by the less productive conifer species. The meadow type also receives considerably use and is probably equally important. The mountain brush type is a distinct type, but also serves as understory for much of the conifer type on this unit which is dominated by ponderosa pine. As part of the Range Inventory Project, Giunta and Musclove (1983), established 12 permanent transects with five line intercepts each on the summer range in 1981. Their impressions were that vegetative trend was stable on the top of Elk Ridge and slightly downward on the periphery around the rim, especially in the aspen type. Data from 1986 corroborated with their findings on the summer range. They outlined three general objectives which should be incorporated into management plans for the future. The first was to improve the productivity and desirability of the montane forest for big game with small clear cuts, especially within a few hundred meters of the plateau rim. The second objective was an accelerated schedule of strategically located water developments. These should allow more even distribution of both livestock and wildlife and allow a greater density of both. The third goal was to maintain or improve the habitat near the plateau rim. The most promising approach would be aspen manipulation and management.

The primary winter range is found between 5,000 and 7,000 feet on the slopes and throughout the large flats surrounding Elk Ridge. Beef Basin, Salt Creek Mesa, Dark Canyon Plateau, and Black Mesa are the most prominent winter concentration areas. Coles and Pederson (1968) identified seven vegetation types in their survey of the winter range.

The sagebrush-grass type, dominated by *Artemisia* species and *Bouteloua gracilis*, are found in Beef Basin and on Black Mesa, two important critical winter ranges. The mountain brush-grass type occupies the upper 1% of the winter range and has the highest rate of production. However, this type is inaccessible during severe winters. The pinyon-juniper type is most prominent and occupies the majority of the winter range. This type is relatively unproductive but provides good thermal and escape cover for deer that use the adjacent, more productive types. Pinyon-juniper with mountain brush, like the mountain brush type, is found in the upper elevations of the winter range. It provides quality deer forage in normal winters but can be inaccessible to deer in severe winters. The Pinyon-Juniper-sagebrush type is fairly open and interspersed throughout larger tracts of pinyon-juniper woodland and is important to wintering deer in both normal and severe winters. Most of the treated and seeded areas are within pinyon-Juniper communities. These chaining projects, done

mostly in the 1960's to improve range for livestock, have also benefitted big-game. These seeded areas should be preserved for both big-game and livestock use. With trends on most overused sagebrush communities going down, herbicide and seeding treatments have been done on several areas to open up the sagebrush and make them more productive and increase their vigor.

### Beef Basin Field Trips

The Beef Basin has been a concern to managers since the early 1980's. It has been over grazed by livestock and to some extent by deer for some years, with range conditions and trends continuing to decline. This area receives concentrated winter deer use, while surrounding wintering areas support numbers below their range carrying capacities. Cattle graze the area usually from the first of November to the end of June each year. The BLM completed some fencing and water developments in the early 1980's to help more evenly distribute livestock use on the area. Post season antler less deer permits have been issued in the past to help alleviate the perceived problem in the Beef Basin area, but what is the real problem with the area? Two field trips have been organized through the years involving personnel from the Utah Division of Wildlife Resources and the BLM. One occurred in 1988 and another in 1992. The first trip addressed the problem with the loss of the cool season grasses and the die-off and decline in vigor of many of the Wyoming big sagebrush within the open park areas of the pinyon-juniper woodland. Some of the open park areas of sagebrush exhibited the effects of the high water years of 1983 through 1985 when some of the lower sagebrush parks had almost standing water on them for long periods of time, especially in the late spring and early summer. The lower areas of these open parks are where most of the sagebrush death was observed. There did not appear at the time to be excessive use in these areas on the sagebrush to warrant that kind of death. The most serious issue is the successive season of use. Another possible problem with the very high precipitation years was with the high snow cover for longer periods of time than normal, increases the incidence of snow mold. The lack of snow since those wet years, in conjunction with a prolonged drought and cold temperatures, can also cause a great deal of winter injury to the sagebrush. The concern here is that even with much lower deer populations, the trend for Wyoming sagebrush is still down, indicating that deer should not be considered the primary cause for the downward trend in the sagebrush population. Some important points that should be brought up with regard to the first field trip are: 1) With the extended drought since 1985, most all cool season grasses have been eliminated by an excessively long (season of use) grazing season, from the fall to the end of June; 2) With little or no cool season grasses, cattle use has turned to sagebrush. Sagebrush cannot sustain continuous use from the early fall through May and June without detrimental effects, for they are evergreen in habit with most of their carbohydrate reserves available in their stems and leaves. Consequently, making them more susceptible to damage with repeated fall and late spring use. The warm season species are not deleteriously affected when grazed in the cooler seasons, for they were all increasing substantially in their respective densities (winterfat, fourwing saltbush, and blue gramma) during the same time period when the trend for sagebrush and cool season grasses was going down. A small barbed wire enclosure on one area demonstrated healthier sagebrush with a good understory of cool season grasses which supports the belief that continuous and excessive use in the early fall through late spring and early summer can cause or accelerate the loss of the cool season grasses and eventually the decline and losses in sagebrush when the grasses are gone.

The second field trip was to try and determine the problem with the open sagebrush parks and what could be done to turn around the downward trend. This trip also further documented the losses of the cool season herbaceous understory with continued declines in vigor and losses to the sagebrush population. On site, it was determined that further studies be initiated to help determine what was causing the continued downward trends in the sagebrush populations and what methods could be employed to improve vigor of the sagebrush and help restore the herbaceous understory. The pilot studies were stopped by the BLM before we were able to initiate the preliminary studies.

## Livestock Grazing

### Abajo Mountains

Heavy livestock use beginning in the late 1800's caused deterioration of the range. According to 1940's records, over 4,000 cattle and 72,000 sheep were using the winter range each year (Mann and Wallace 1983). Range use is much more controlled and conditions have improved since then. Extensive areas of pinyon-juniper were chained and seeded in the 1960's. Although wildlife cover requirements were not considered at the time (chained areas were large and usually square with no regard for cover or edge effect), they still provided many benefits to the big game populations. Alkali Flat and Harts Draw are the most critical deer wintering areas. Other areas of concentration are Shay Mesa, Indian Creek, Deerneck Mesa through Step Hill, Cedar Point, Montezuma Canyon, and Recapture Wash.

### Elk Ridge

Livestock grazing is the primary land use for the herd unit. Pioneers began grazing livestock in the 1880's. By the 1940's, records indicate that over 10,000 cattle and 12,000 sheep were authorized to graze on the winter range. Plummeting sheep and wool prices in the 1950's caused ranchers to convert to cattle operations. Since the 1960's, approximately 4,500 cattle have been authorized to graze on the winter range. In addition, 2,127 cattle and 49 horses are permitted to graze on six allotments on the summer range. Other important land uses are logging, oil and gas exploration, mining, wood cutting, and recreation. Extensive areas of Elk Ridge are covered by ponderosa pine which provide large amounts of quality saw timber. Most of the area has been logged once and selective cuts are scheduled for the future. Oil and gas exploration has increased in recent years while mining operations are suspended due to low uranium prices. Activities associated with these land uses need to be closely monitored and steps taken to minimize and mitigate negative impacts on the water quality and on the range and associated wildlife populations.

Early Indian pictographs and petroglyphs found in the area indicate the presence of deer, desert bighorn, and buffalo (Rawley 1985). Historical accounts indicate that mule deer were abundant when settlers first came into the area in the 1870's and 1880's. Due to heavy hunting pressure and excessive livestock grazing which resulted in very poor range conditions, deer numbers had reached a low between 1900 and 1910. With the inception of the U.S. Forest Service and grazing restrictions, and under the "buck only" hunting law enacted by the legislature in 1913, the deer herd began increasing again. By the 1940's, managers became concerned that deer numbers were exceeding the carrying capacity of their winter range. Antler less permits, second and third deer permits and post season hunts were all strategies used to reduce deer numbers.

## Wildlife Management Unit Objectives

A herd of 20,500 wintering deer (13,500 on Abajo Mountain portion and 7,000 on the Elk Ridge portion) is the current objective for Unit 14. The herd composition of 15 bucks per 100 does, with 30% of the bucks three-point or better is sought for on the Abajo Mountain portion of unit 14. On Elk Ridge, the objective is to achieve 30 bucks per 100 does, with 50% of the bucks being three-point or better.

The target for elk is to achieve a population of 1,200 wintering elk (1,000 west of Highway US-191 and 200 east of Highway US-191). On the west site of US-191, the objective is to achieve a composition of 35 bulls per 100 cows, with 50% of the bulls 2.5 years or older. On the east side of Highway-191, a herd composition of 25 bulls per 100 cows, with 50% of the bulls 2.5 years or older is sought.

## Trend Study Site Establishment

The deer winter range of the San Juan-Blue Mountain unit was inventoried by Coles and Pederson in 1966 (published in 1967 as Pub. No. 67-1). They inventoried the summer range in 1967 (Coles and Pederson

1968). In 1981, 9 permanently staked line-intercept transects were established on the summer range with the intention of obtaining baseline data for monitoring range trend (Giunta and Musclow 1983). In the spring of 1986, local interagency personnel selected four of the most crucial line-intercept studies to be reread. These four line-intercept transects were reread and replaced with the interagency trend studies. Seven additional interagency trend studies were established in the summer of 1986. In 1994, an additional study was established. In 1999, eleven trend studies were reread on the Abajo Mountain portion of unit 14.

Twelve line-intercept transects were established on the Elk Ridge portion of unit 14 in 1981. Five of the 12 were reread and replaced by interagency trend studies in 1986, and an additional 11 study sites were selected for and added to the monitoring schedule. All of these study sites were reread in 1992 and 1998. A few sites were also read in 1994, including a new trend study site which was established at Lower Deer Flat.

## SUMMARY

### WILDLIFE MANAGEMENT UNIT 14 (35 & 36) - SAN JUAN

Wildlife management unit 14 is composed of the old Elk Ridge Deer Herd unit #35 and the old Abajo Deer Herd Unit #36. The Abajo portion of the unit currently consists of 11 trend study sites, 5 of which are winter range areas. These include, Alkali Point 14-1, Hart's Draw 14-9, Hart's Point 14-10, Shay Mesa 14-11, and Shingle Mill 14-12. Of these sites, all show stable or improving soil trends. Browse trends are stable to slightly improving on 3 of the sites, but down at Alkali Point and Hart's Draw. Both sites display moderate to heavy use on sagebrush, poor reproduction, and extremely high percent decadence at Alkali Point. All of these winter range sites display downward herbaceous trends except for Shingle Mill, and all showed a dramatic and significant increase in cheatgrass in their herbaceous understories. The amount of cheatgrass varies between sites from a high of 92% of the grass cover consisting of cheatgrass at Alkali Point, to a low of 33% at Hart's Point. The average for all of these sites is high however at 57% . Shingle Mill, which had an improving herbaceous trend, is higher in elevation than the other winter range sites. It has a diverse herbaceous understory which contains no cheatgrass. However, two poisonous species, lupine and weedy milkvetch, dominate the herbaceous understory by providing 42% of the total grass and forb cover. Of the sites with increasing cheatgrass, all had relatively high soil temperatures. The average temperature for the 4 sites was 66.8°F. High soil temperatures dry out the soil profile earlier in the season and give winter annuals like cheatgrass a competitive advantage against cool season grasses and forbs.

The other six sites on this part of unit 14, consist of spring/fall or summer ranges. These include, Brushy Basin 14-2, Gold Queen Basin 14-3, Camp Jackson Reservoir 14-4, Jackson Ridge 14-5, Hart's Draw Reservoir 14-6, and Peter's Point 14-8. Soil trends for all of these sites appear to be stable. Browse trends are stable or improving on all sites except for Hart's Draw Reservoir which displays a slightly down trend. Herbaceous trends are all stable except for Brushy Basin which has a slightly down trend.

Nineteen trend study sites were read on the Elk Ridge portion of unit 14. Of these, 11 are winter range areas. Five are found on the southern end of the unit including, Black Mesa 14-13, Texas Flat 14-14, Harmony Flat 14-15, Lower Lost Park 14-16, and Lower Deer Flat 14-32. The other six occur on the northern portion of Elk Ridge. These include, Wild Cow Point 14-22, South Plain 14-23, Ruin Park 14-24, North Cottonwood 14-28, and Chippean Ridge 14-31. Of these winter range sites all displayed stable or slightly improving soil trends except for Salt Creek Mesa and Chippean Ridge which has slightly downward trends. In addition, trends were stable but condition was poor at Harmony Flat, Lower Lost Park, and North Cottonwood. Browse trends were down for 8 of the 11 sites, stable on 2 and up on only 1, Texas Flat, which is recovering from a herbicide treatment. Most of the downward trends are due to heavy use, poor reproduction, extended drought (especially summer drought), and high percent decadence on sagebrush. This is especially true for South Plain, and Ruin Park which are found in Beef Basin. Herbaceous understory trends are down on 7 of the 11 sites. Three sites, Lower Deer Flat, North Cottonwood, Harmony Flat have stable herbaceous trends, but the herbaceous understories at North Cottonwood and Harmony Flat are in poor condition. The only site to display a slightly improving herbaceous understory trend was Chippean Ridge. Of the 7 sites with a declining herbaceous trend, 4 show a dramatic and significant increase in cheatgrass, and at Lower Lost Park, also a dramatic increase in sixweeks fescue. These annual grasses provide an average of 72% of the grass cover on these four sites. Average soil temperature of these sites is high at 74°F.

Transitional ranges are sampled with 3 trend study sites, Deer Flat 14-17, Mormon Pasture Point 14-27, and Milk Ranch Point 14-30. Trends at Deer Flat are up to slightly up in all categories while Milk Ranch Point displays slightly downward trends in all categories. Mormon Pasture Point shows a downward soil trend, a slightly improving browse trend and a stable herbaceous trend.

The 5 summer range trend studies include, Kigalia Point 14-18, Wooden Shoe 14-19, Gooseberry 14-20, North Long Point 14-21, and The Wilderness 14-26. Soil trends on these sites are stable or up slightly on 3 of the 5 sites but down slightly at Kigalia Point and The Wilderness. Kigalia Points' downward trend is due to reduced protective ground cover because of a prescribed ground fire which occurred sometime during the fall of 1998. Browse trends are down or slightly down for all sites except Wooden Shoe which displays a stable trend. Browse on most of these sites is not the critical component however. The more important herbaceous

understory trends are down or slightly down at Kigalia Point, Wooden Shoe, and The Wilderness but stable at Gooseberry and North Long Point.

#### TREND SUMMARY

	Category	1994	1999
14-1 Alkali Point	soil	-	+
	browse	-	-
	herbaceous understory	0	-
14-2 Brushy Basin	soil	0	0
	browse	0	+
	herbaceous understory	-	-
14-3 Gold Queen Basin	soil	+	0
	browse	0	0
	herbaceous understory	+	0
14-4 Camp Jackson Reservoir	soil	0	0
	browse	0/+	0
	herbaceous understory	+	0
14-5 Jackson Ridge	soil	+	0
	browse	+	0
	herbaceous understory	+	0
14-6 Hart's Draw Reservoir	soil	+	0
	browse	-	-
	herbaceous understory	0/+	0
14-7 Shay Mountain	soil	0/+	NA
	browse	0	NA
	herbaceous understory	-	NA
14-8 Peters Point	soil	-	0
	browse	-	0
	herbaceous understory	-	0
14-9 Harts Draw	soil	-	+
	browse	-	-
	herbaceous understory	0	-
14-10 Harts Point	soil	-	0
	browse	-	+
	herbaceous understory	0	-

	Category	1994	1999
14-11 Shay Mesa	soil	-	0
	browse	0	0
	herbaceous understory	-	-
14-12 Shinglemill	soil	est	0
	browse	est	0
	herbaceous understory	est	+
Site	Category	1992	1999
14-13 Black Mesa	soil	0/+	+
	browse	-	-
	herbaceous understory	+	-
14-14 Texas Flat	soil	0	+
	browse	-	+
	herbaceous understory	+	-
14-15 Harmony Flat	soil	-	0
	browse	0	-
	herbaceous understory	0	0
14-16 Lower Lost Park	soil	0	0
	browse	0	-
	herbaceous understory	-	-
14-17 Deer Flat	soil	0	+
	browse	+	+
	herbaceous understory	+	+
14-18 Kigalia Point	soil	0	-
	browse	0	-
	herbaceous understory	0/+	-
14-19 Wooden Shoe	soil	0	0
	browse	0	0
	herbaceous understory	+	-
14-20 Gooseberry	soil	0	0
	browse	+	-
	herbaceous understory	0	0
14-21 North Long Point	soil	0	+
	browse	+	-
	herbaceous understory	-	0



	Category	1992	1999
14-22 Wild Cow Point	soil	0	0
	browse	0/+	0
	herbaceous understory	0	-
14-23 South Plain	soil	0	0
	browse	-	-
	herbaceous understory	0	-
14-24 Ruin Park	soil	0	0
	browse	-	-
	herbaceous understory	0	-
14-25 Davis Pocket	soil	0	NR
	browse	0/+	NR
	herbaceous understory	-	NR
14-26 The Wilderness	soil	0	-
	browse	+	-
	herbaceous understory	-	-
14-27 Mormon Pasture Point	soil	+	-
	browse	+	+
	herbaceous understory	-	0
14-28 North Cottonwood	soil	NR	0
	browse	NR	-
	herbaceous understory	NR	0
14-29 Salt Creek Mesa	soil	est	-
	browse	est	-
	herbaceous understory	est	-
14-30 Milk Ranch Point	soil	est	-
	browse	est	-
	herbaceous understory	est	-
14-31 Chippean Ridge	soil	est	-
	browse	est	0
	herbaceous understory	est	+
14-32 Lower Deer Flat	soil	est	0
	browse	est	-
	herbaceous understory	est	0

(0) = stable, (+) = up, (-) = down, (0/+) = stable to up, (0/-) = stable to down